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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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August 11, 1988

Mr. Jerry Glazier
5M, Incorporated
P.O. Box 752
Hurricane, Utah 84737

Dear Mr. Glazier:

Re: Review of Final Reclamation Plan, 5M, Incorporated, Silver Reef Mine, M/053/002, Washington County, Utah

Thank you for your April 25, 1988, "Final Reclamation Plan" addendum for the Silver Reef Mine. The amended plan was submitted in response to the Division's request for additional information concerning the final reclamation of the site.

Overall, the final reclamation proposal is favorable. However, we have outlined several conditions which are intended to clarify and support some of the general commitments made in the reclamation plan. Upon receipt of a written concurrence to the conditions detailed below, the Division can then proceed to publish a notice of tentative approval for 5M, Inc. reclamation plan.

We have formatted our comments to address, by number, the items as outlined in your April 25th submittal.

TENTATIVE APPROVAL CONDITIONS:

1. Attachment (d), Final Reclamation Plan, page 1, items b) & c).

A 15 year suspension period is not acceptable. Division staff members discussed a maximum 5 to 10 year time period during recent onsite inspections with 5M, Inc. Division practice indicates that formal Board review and approval is required for mining suspension periods that exceed ten (10) years.

Division records indicate that the Silver Reef mine site was last active in 1984. On this basis, the operation can remain in suspension for another six (6) years (i.e., 1994), prior to final reclamation. A formal petition to the Board of Oil, Gas and Mining to extend the suspension period beyond ten (10) years will be required, in 1994, if an extended suspension period is desired. If our records are in error, please provide us with the correct information to properly adjust this time period.

2. Attachment (d), Final Reclamation Plan, page 1, item 5.

All open pit highwalls should be reduced to a slope of 45 degrees or less, unless otherwise shown to have long term stability. A variance will need to be approved by the Division for any slopes, which will exceed 45 degrees.

3. Attachment (d), Final Reclamation Plan, page 1 & 2, items 1, 15 & 18.

The maintenance building, main substation and powerline can remain so long as they have a reasonable continued postmining use. It must be understood that should 5M, Inc. decide to sell the property, the successor must agree to assume the liability and reclamation responsibility for the structures which remain. Otherwise, the removal of these facilities and reclamation of the corresponding disturbed areas will remain with 5M, Inc.

4. Attachment (d), Final Reclamation Plan, page 2, items 6, 9, 11-14, and 16.

The plan fails to identify the type and source of the cover material to be used to support revegetation on the areas to be reclaimed. Topsoil stockpiles were not noted during the recent onsite inspections. Therefore, it is assumed that a borrow area(s) will be required to obtain topsoil material to cover the disturbed areas to be reclaimed. The operator must also commit to reclaim any borrow areas created.

It is suggested that the remaining ore stockpiles be regraded to achieve 3H:1V outslopes, covered with topsoil (or a substitute topsoil material), and then revegetated. An acceptable alternate commitment would be to regrade these areas to achieve 3H:1V sideslopes and then apply a native hay mulch at a rate of 4000 lbs./acre, without the addition of borrowed soil material. The following seed mixture is recommended:

<u>Common Name</u>	<u>Species Name</u>	<u>Pure Live Seed</u> <u>lbs/ac</u>	<u>\$/lb</u>	<u>Total/acre</u>
Western Wheatgrass	Agropyron smithii	4.00	3.40	13.60
Intermediate Wheatgrass	Agropyron intermedium	4.00	2.85	11.40
Indian Ricegrass	Oryzopsis hymenoides	4.00	6.95	27.80
Yellow Sweetclover	Melilotus officinalis	4.00	0.60	2.40
Alfalfa	Medicago sativa	4.00	1.75	7.00
Rabbitbrush	Chrysothamnus nauseosus	0.75	75.00	56.25
.75				
Four-wing Saltbush	Atriplex canescens	3.00	7.00	21.00
	Total	23.75	5.87	139.45
			use	\$6/lb

This seeding rate is for broadcast seeding. If the seed is to be drilled in, the rates can be cut in half. When broadcast seeding be sure that the seeding surface has been broken up by ripping or disking. After seeding, the soil surface should be scarified to incorporate the seed. This can be accomplished by dragging a light chain, log drag or roller behind a cat or tractor.

In areas where hay mulch will be applied, broadcast seeding should be done afterward. After the hay mulch is spread on the ground, it should be crimped mechanically into the substrate material via disking or another device that will track the hay into the ground. Waiting until late fall to plant will produce the best results. The seeds will then lie dormant throughout the winter and germinate the following spring.

5. Attachment (d), Final Reclamation Plan, page 2, item 9.

The heap leach pad out slopes should be regraded to 3H:1V or less to help ensure stability and revegetation success.

The operator has failed to indicate the neutralization procedures proposed for the ore on the heap leach pad. A commitment to neutralize the ore in a manner accepted by the State Division of Environmental Health (Bureau of Water Pollution Control) will suffice.

6. Attachment (d), Final Reclamation Plan, page 2, item 10.

Prior to reclamation of the solution ponds, any potentially toxic or hazardous residual evaporite material or solutions remaining in the process collection ponds must be neutralized and/or disposed of at an approved waste disposal site. An acceptable alternative would be to isolate any residual evaporite material by burial under a minimum of four (4) feet of cover.

7. Attachment (d), Final Reclamation Plan, page 3, items 22-24.

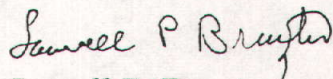
All shafts, tunnels and boreholes that the operator is legally responsible for, and which do not have a legitimate continuing postmining use, should be permanently closed, and the surface disturbance reclaimed.

As previously outlined in Division letters dated March 10, 1988 and April 4, 1988 to 5M, Inc., the operator will have 60 days following the Division's issuance of tentative approval for the final reclamation plan to resolve posting of an adequate reclamation surety. 5M, Inc. may want to refile their petition to the Board regarding the applicability of the forfeited surety from Kerley Industries at that time.

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Mr. Jerry Glazier
M/053/002
August 9, 1988

Thank you for your cooperation in completing this permitting action. Please contact me or D. Wayne Hedberg of my staff should you have questions or concerns regarding this review. We look forward to receipt of your written response so we may proceed with issuance of tentative approval.

Sincerely,



Lowell P. Braxton
Administrator
Mineral Resource and
Reclamation Program

jb
cc: Charlie Dietz, BWPC
BLM Area Manager, Dixie Resource Area
D.W. Hedberg
H. Shepherd
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